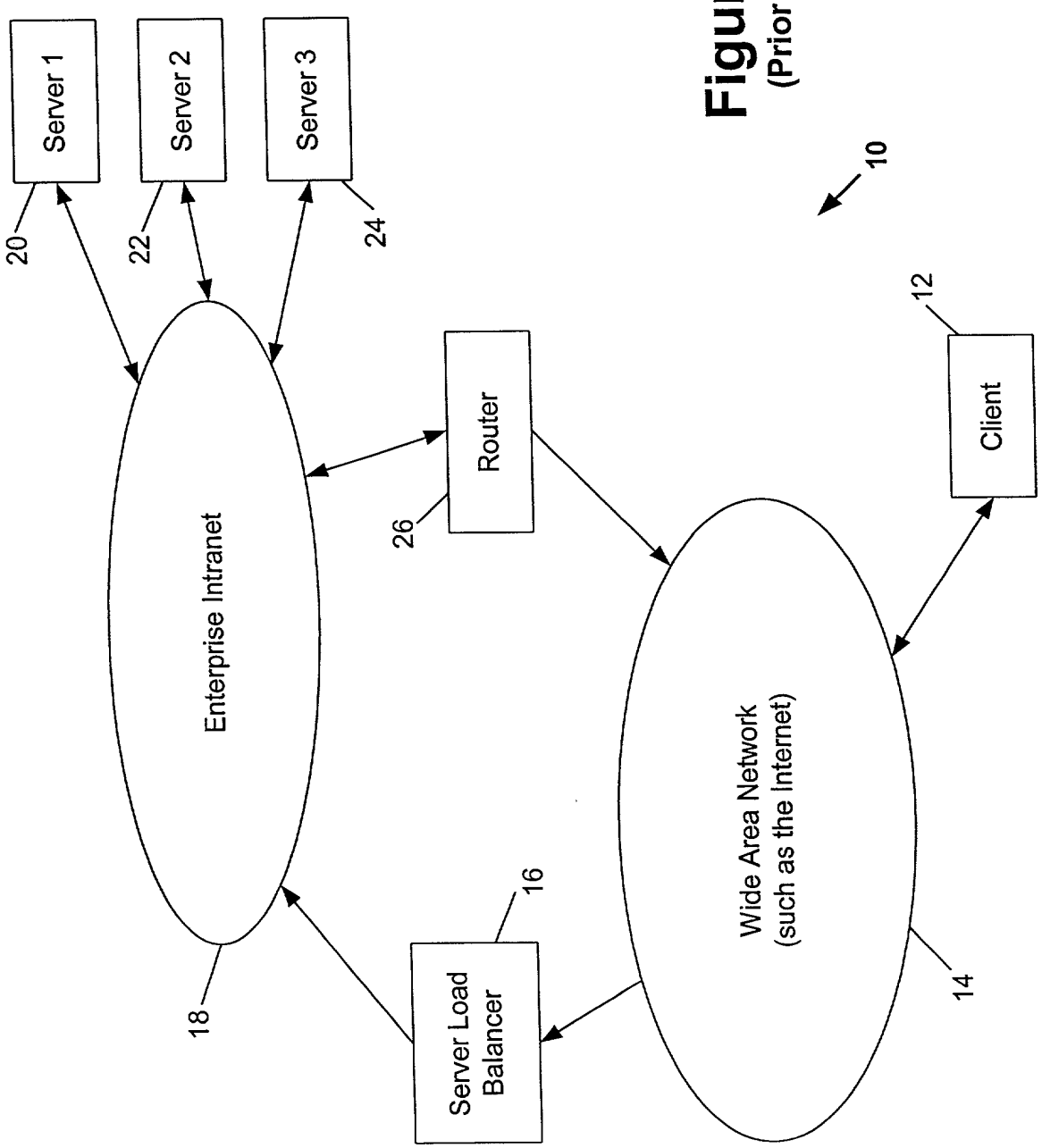

Figure 1
(Prior Art)

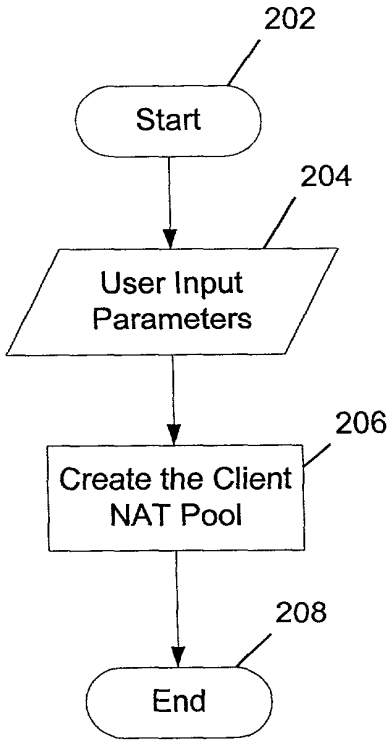
202
Start
204
User Input
Parameters
206
Create the Client
NAT Pool
208
End

Figure 2

T08020 "2ES78760

CNP	Field Symbol	Field Name	Source
304	PNAME	Pool Name	Input
306	FIPA	First IP Address	Input
308	LIPA	Last IP Address	Input
310	NETMASK	Net Mask	Input
312	ICONNS	Initial Num. Connection Blocks	Input
314	MCONNS	Max Num. Connection Blocks	Input
316	MPA	Memory Pool Address	NULL derived
318	ILA	Interval List Address	Derived

302

Figure 3

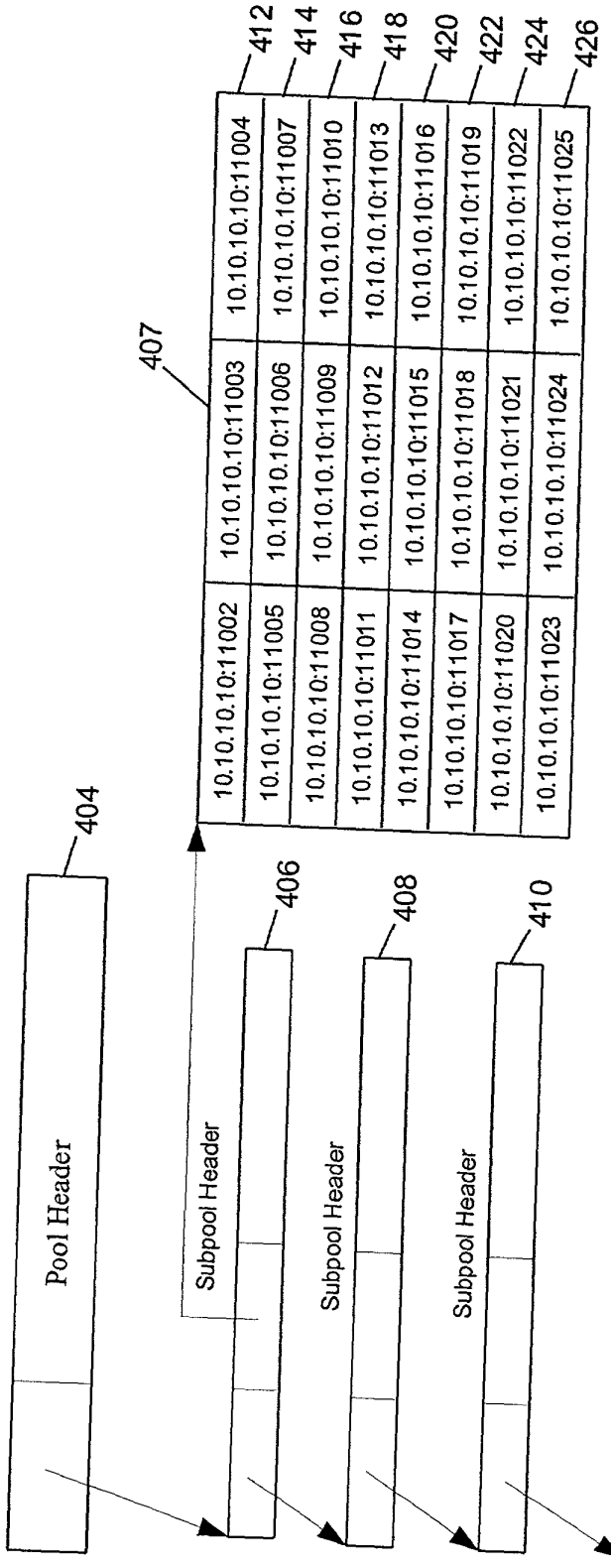
400
404
Pool Header
406
Subpool Header
408
Subpool Header
410
Subpool Header
407
412
414
416
418
420
422
424
426
10.10.10.10:11002
10.10.10.10:11003
10.10.10.10:11004
10.10.10.10:11005
10.10.10.10:11006
10.10.10.10:11007
10.10.10.10:11008
10.10.10.10:11009
10.10.10.10:11010
10.10.10.10:11011
10.10.10.10:11012
10.10.10.10:11013
10.10.10.10:11014
10.10.10.10:11015
10.10.10.10:11016
10.10.10.10:11017
10.10.10.10:11018
10.10.10.10:11019
10.10.10.10:11020
10.10.10.10:11021
10.10.10.10:11022
10.10.10.10:11023
10.10.10.10:11024
10.10.10.10:11025

Figure 4

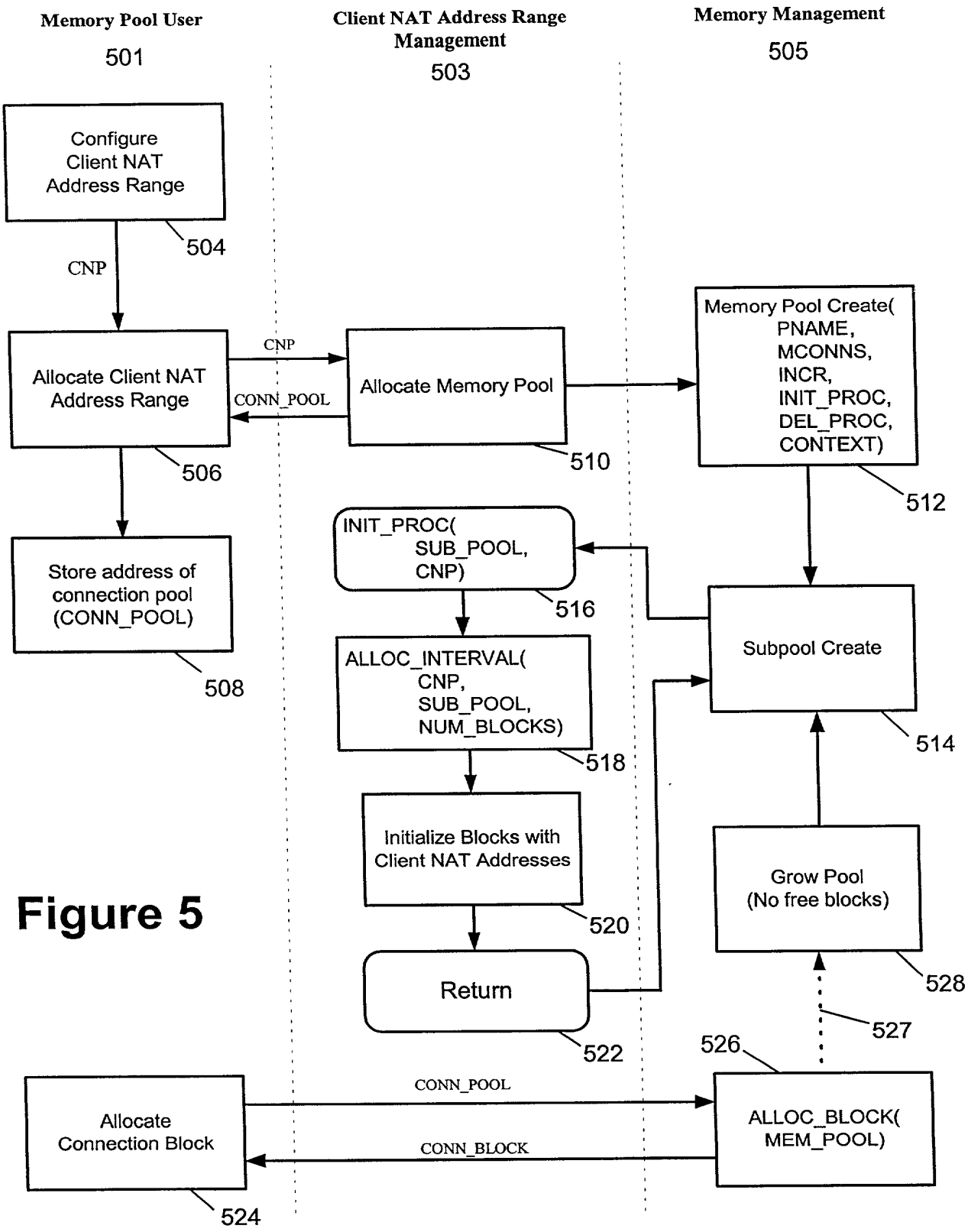
Memory Pool User
501
Client NAT Address Range Management
503
Memory Management
505
Configure Client NAT Address Range
504
CNP
Allocate Client NAT Address Range
506
CNP
CONN_POOL
Allocate Memory Pool
510
Memory Pool Create(PNAME, MCONNS, INCR, INIT_PROC, DEL_PROC, CONTEXT)
512
Store address of connection pool (CONN_POOL)
508
INIT_PROC(SUB_POOL, CNP)
516
Subpool Create
514
ALLOC_INTERVAL(CNP, SUB_POOL, NUM_BLOCKS)
518
Initialize Blocks with Client NAT Addresses
520
Grow Pool (No free blocks)
528
Return
522
527
526
CONN_POOL
CONN_BLOCK
Allocate Connection Block
524
ALLOC_BLOCK(MEM_POOL)

Figure 5

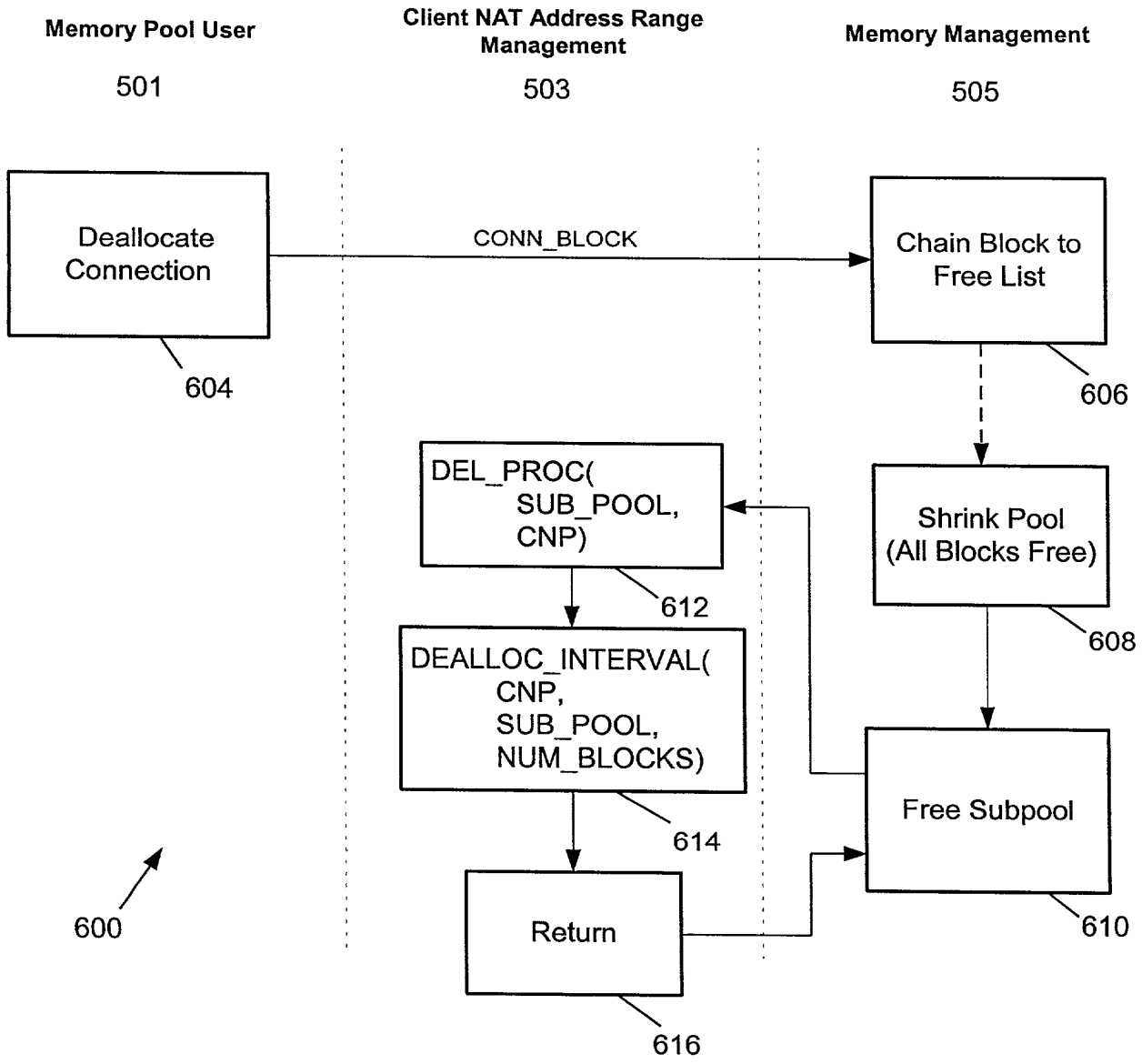
Memory Pool User
501
Client NAT Address Range Management
503
Memory Management
505
Deallocate Connection
604
CONN_BLOCK
Chain Block to Free List
606
DEL_PROC(SUB_POOL, CNP)
612
Shrink Pool (All Blocks Free)
608
DEALLOC_INTERVAL(CNP, SUB_POOL, NUM_BLOCKS)
614
Free Subpool
610
Return
616
600

Figure 6

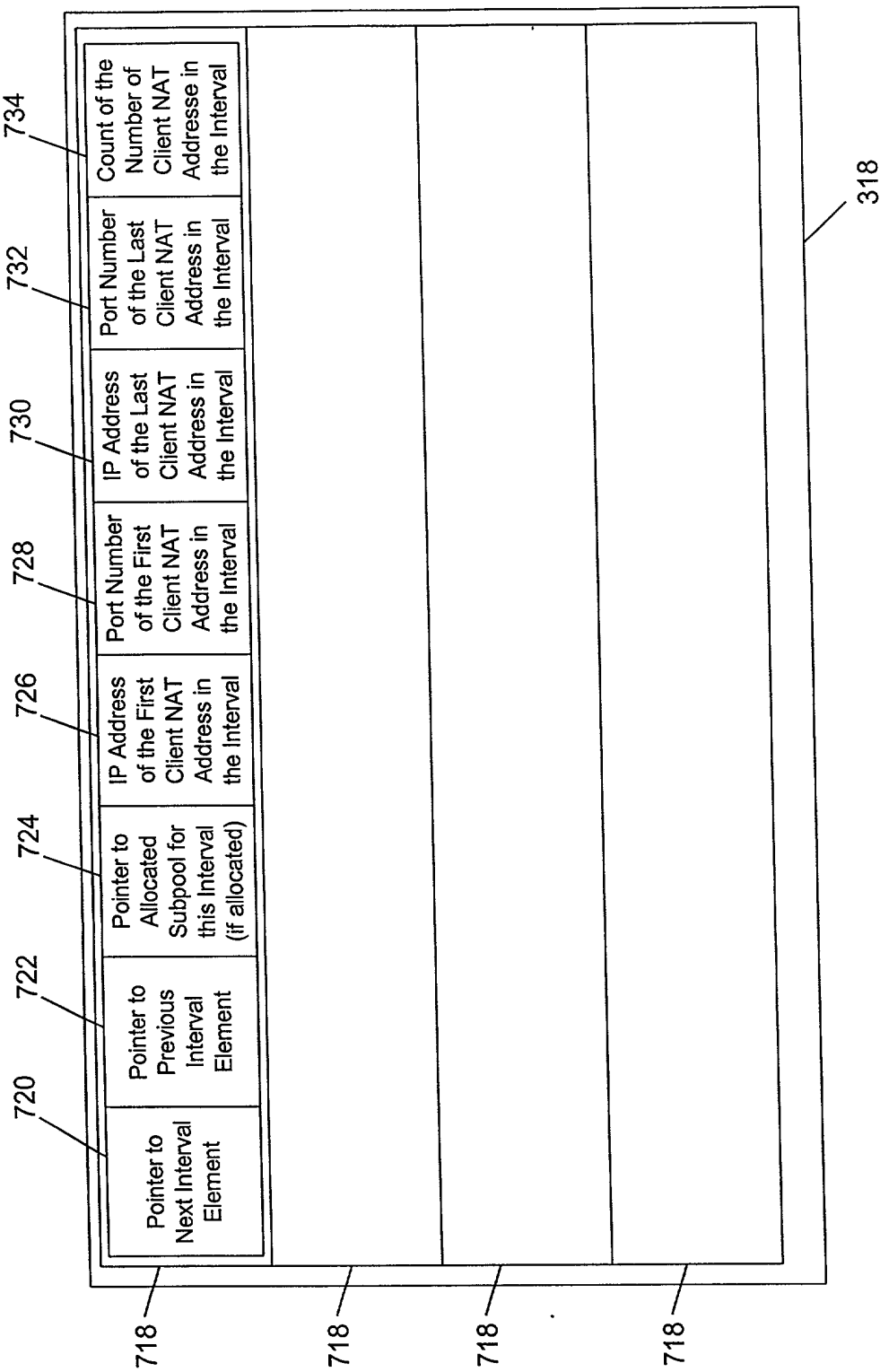
Pointer to Next Interval Element
Pointer to Previous Interval Element
Pointer to Allocated Subpool for this Interval (if allocated)
IP Address of the First Client NAT Address in the Interval
Port Number of the First Client NAT Address in the Interval
IP Address of the Last Client NAT Address in the Interval
Port Number of the Last Client NAT Address in the Interval
Count of the Number of Client NAT Addresse in the Interval
720
722
724
726
728
730
732
734
718
718
718
718
318

Figure 7